

# Properties of Spray Dried Soymilk Powder as Affected by Drying and Feed Parameters

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**Abstract** Soymilk is becoming more and more popular as consumers become more health conscious and seek out alternatives to dairy products. Soymilk is touted as a healthy food because it is cholesterol and lactose free and contains phytochemicals. Furthermore, there is a real interest among consumers in soymilk in the form of dried powder. A dry powder product is highly desirable since it not only possesses long shelf-life, but also requires relatively low transportation cost and storage capacity and the product can be distributed over a wide area. The objective of this study was to assess the impact of some processing parameters on some physical (particle size, colour, density, flowability and cohesiveness) and reconstitution properties (wettability and dispersibility) of spray dried soymilk powder. The experiment was conducted according to Response Surface Methodology, with the independent variables being: inlet temperature (180–220 °C), feed rate (20 – 40 ml/min), and solid content of feed (15-25 %). Other process parameters like aspiration rate, outlet air temperature of 90 °C, were kept constant. Inlet air temperature during spray drying was found to be the main factor affecting almost all the quality parameters of the powder followed by solid content of feed. The best processing conditions to obtain a free-flowing soymilk powder by spray drying were: inlet temperature of 195 °C; solid content of feed of 24%, at a feed rate of 27 ml/min.